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US Patents (# 5791693)

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March 8, 2004

The
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4/15/95 Paper
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The Commissioner of
Patents and Trademarks

Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.

If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.

If this application was filed on or after June 8, 1995, the term of this patent is twenty years from the U.S. filing date, subject to any statutory extension. If the application contains a specific reference to an earlier filed application or applications under 35 U.S.C. 120, 121 or 365(c), the term of the patent is twenty years from the date on which the earliest application was filed, subject to any statutory extension.

Bruce Lehman

Commissioner of Patents and Trademarks

Pamela Morton

Attest



US005791693A

United States Patent [19]

Crawford

[11] Patent Number: 5,791,693
[45] Date of Patent: Aug. 11, 1998

[54] PUP JOINT WITH INTEGRAL WING NUT
RETENTION SHOULDER

[75] Inventor: Paul A. Crawford, Stephenville, Tex.

[73] Assignee: FMC Corporation, Chicago, Ill.

[21] Appl. No.: 962,182

[22] Filed: Oct. 31, 1997

Related U.S. Application Data

[63] Continuation of Ser. No. 651,646, May 22, 1996, abandoned.

[51] Int. Cl.⁶ F16L 19/025

[52] U.S. Cl. 285/23; 285/354; 285/387;
285/388

[58] Field of Search 285/23, 354, 386,
285/387, 388, 321

[56] References Cited

U.S. PATENT DOCUMENTS

| | | | |
|-----------|---------|------------|---------|
| 1,186,021 | 6/1916 | Mezger | 285/388 |
| 2,298,109 | 10/1942 | Frank | 285/388 |
| 3,751,077 | 8/1973 | Hiszpanski | 285/386 |
| 4,116,477 | 9/1978 | Wahoski | 285/386 |

| | | | |
|-----------|---------|----------|---------|
| 4,124,234 | 11/1978 | Clark | 285/388 |
| 4,575,044 | 3/1986 | Gentry | 285/388 |
| 4,648,634 | 3/1987 | Kelch | 285/387 |
| 4,877,270 | 10/1989 | Phillips | 285/387 |
| 5,160,174 | 11/1992 | Thompson | 285/387 |
| 5,362,109 | 11/1994 | Pacnt | 285/388 |

FOREIGN PATENT DOCUMENTS

| | | | |
|--------|--------|----------------|---------|
| 723284 | 3/1980 | U.S.S.R. | 285/387 |
| 17810 | 1/1914 | United Kingdom | 285/387 |

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[57] ABSTRACT

A pup joint is provided which comprises a length of pipe, a female sub integral with one end of the pipe and having external threads formed thereon, a male sub integral with the other end of the pipe, a wing nut for threadedly connecting the male sub to the female sub, a set of retainer segments for retaining the wing nut on the pup joint, and a retention shoulder formed on the male sub to maintain the wing nut and retainer segments on the male sub. In a preferred embodiment of the invention, the pipe and the male and female subs are comprised of a single forging, and the retention shoulder is formed by machining the male sub.

3 Claims, 2 Drawing Sheets

